

WHAT IS CLAIMED IS:

1. An image sensor unit comprising:

an illumination section including a light source  
and light guide to illuminate a document;

5 an image sensing element for converting an  
optical image of the document into an electrical  
signal;

a cylindrical lens for focusing the optical image  
on said image sensing element; and

10 a frame for integrally holding said illumination  
section, said image sensing element, and said lens,

wherein said light guide has undergone  
antireflection treatment on a surface thereof on the  
document side.

15 2. The unit according to claim 1, wherein the  
antireflection treatment is coating in black.

3. The unit according to claim 1, wherein the  
antireflection treatment is a surface treatment for  
forming a roughened or finely corrugated surface.

20 4. The unit according to claim 1, wherein the  
antireflection treatment is formation of an inclined  
surface on the document side.

5. The unit according to claim 1, wherein said  
illumination section comprises a pair of illumination  
25 sections so disposed as to sandwich said lens.

6. The unit according to claim 1, wherein a distance  
from said image sensing element to the surface of said

light guide on the document side is shorter than a distance from said image sensing element to an end of said lens on the document side.

7. The unit according to claim 1, wherein said frame  
5 is open on the document side.

8. An image reading apparatus comprising:

the image sensor unit defined in claim 1; and

a moving mechanism for moving a relative position  
between the image sensor unit and the document,

10 wherein the document is scanned by relative  
movement between the image sensor unit and the document.

9. The apparatus according to claim 8 further  
comprising

a transparent plate for placing and supporting  
15 the document, and

a support portion for supporting an end portion  
of said transparent plate,

wherein part of the image sensor unit is capable  
of placed below said support portion.

20 10. An image sensor unit comprising:

a pair of illumination sections each including a  
light source and light guide to illuminate a document;

an image sensing element for converting an  
optical image of the document into an electrical  
25 signal;

a cylindrical lens for focusing the optical image  
on said image sensing element; and

a frame for integrally holding said illumination sections, said image sensing element, and said lens,

wherein said illumination sections are so disposed as to sandwich said lens, said light guides  
5 have exit ports for making light from said light sources emerge toward the document, and said exit ports are formed such that a peak of exit light is farther than a focal position of said lens for said image sensing element with respect to said image sensing  
10 element, and the focal position is included in a beam crossing region of exit beams from said pair of illumination sections.

11. The unit according to claim 10, wherein each of said light sources are fixed to an end portion of a  
15 corresponding one of said light guides.

12. The unit according to claim 11, wherein said light sources are fixed to different end portions of said light guides.

13. The unit according to claim 12, wherein said  
20 light sources have same characteristics and are disposed at point-symmetrical positions about an axis extending parallel to an axis of said lens from a substantially center of said image sensing element.

14. The unit according to claim 11, wherein said  
25 light sources are fixed to end portions of said light guides on the same side.

15. The unit according to claim 14, wherein said

light sources are mounted on a single circuit board.

16. The unit according to claim 10, wherein said light sources comprise one or more LEDs of a single color or a plurality of colors.

5 17. An image reading apparatus comprising:

the image sensor unit defined in claim 10; and

a moving mechanism for moving a relative position between the image sensor unit and the document,

wherein the document is scanned by relative

10 movement between the image sensor unit and the document.